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MULTI-USE CARRIER

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INVENTORS
Kim Sutton-Rainey
David Manthey

FIELD OF THE INVENTION

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This invention relates generally to a portable food and beverage carrier and, more specifically, a food and beverage carrier configured to display advertising

BACKGROUND OF THE INVENTION

20 Many food and beverage carriers used today include carriers the surface of which are unsuitable for affixing a printed advertising message. Many types of food and beverage carriers are based on paper products, predominantly corrugated cardboard. The corrugated cardboard type food and beverage carriers offer surfaces amenable to presenting a printed advertising message. Unfortunately, the corrugated paper based food and beverage carriers are multi unit constructed systems and present logistical problems in storing and assembling the carriers on-site for uses at sporting events as occurs in stadiums, concerts, or other public
25 venue areas. Besides presenting logistical difficulties in assembling the corrugated cardboard



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816 Second Avenue
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206.381.3300 • F: 206.381.3301

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paper carriers, even when collapsed because of their multi unit construction increase the storage space required by local food vendors doing business at the public venues.

There is a need to have a corrugated cardboard container having a handle, a plurality of panels of sufficiently large area to present printed advertising messages, and is assembled from a minimum action assembly process. There is a need for the food and beverage container to be assembled from a collapsed state with a minimum of manipulations to assemble into a three dimensional usable state. The need is also for the food and beverage carrier to have sufficient structural strength conferred by the handle to permit single hand carrying of food and beverages, especially when the food and beverages are asymmetrically loaded to create an unbalanced weight distribution. The handle of the food and beverage carrier needs to have a sufficiently large panel size to present a printed advertising message. There is also a need for the food and beverage carrier to be easily disposable by incineration. There is yet another need for a carrier to function in the transporting of hazardous materials, in particular bio-hazardous materials such as with petri dishes and other microbial specimen containers. In this case, the advertising panels can be reconfigured to present printed hazardous waste warnings.

SUMMARY OF THE INVENTION

The instant invention is a multi-use carrier device having a handle and is made from a single-die cut sheet of flexible materials that is transformed or erected from a collapsed state into an expanded, carrier-ready state with a minimum of assembly actions. The carrier ready state of the multi-use carrier is determined by the totting duties of the preferred embodiments of the invention, such as totting supplies pertinent to and not limited by the food, beverage, gardening, janitorial, construction, microbiological, chemical, and nuclear industries. Depending on the totting duties of the multi-use carrier, the preferred embodiments of the invention include a plurality of surfaces to receive a plurality of printed messages and images concerning gardening, janitorial, construction, microbiological,



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chemical, nuclear, business coupons, and recreational board game subject matters. The flexible materials used in constructing the multi-use carrier includes paper-based materials, plastic-based materials, and hybrid plastic-paper materials. The paper-based materials include corrugated cardboard that uses, but not limited by, fluting grades A, B, C, E, F, and micro-fluting, and is amenable for incineration, or alternatively, recycling. The flexible materials used in the multi-use carrier permit folding of carrier sections about a plurality of axes. Though made by flexible materials, the handle is securely affixed to at least one internal wall, and the internal wall in turn firmly is securely affixed to the carrier bottom. This handle-internal wall-bottom securing arrangement imparts significant bridge-like stability to the multi-carrier and prevents buckling of the carrier under normal use conditions, and greatly aids the hand carrying of unbalanced loads.

The multi-use carrier comprises a plurality of preferred embodiments such that each preferred embodiment is structurally stabilized by a handle that is flexibly affixed to the carrier bottom by at least one flexible reinforcing flange and is pivotable to permit transformation to the expanded state and secured by a plurality walls substantially perpendicular to the handle having tabs that engage in slots to prevent reversion to the collapsed state. The plurality of embodiments includes a first preferred embodiment having a central chamber surrounded by plurality of sub-chambers, each sub-chamber housing at least one aperture designed for specific toting tasks. The first preferred embodiment has the handle, at least two sides serving as a plurality of exterior walls along the carrier periphery, a bottom with a plurality of slots, a first plurality of interior walls secured by flexible reinforcing flanges, and a second plurality of interior walls that secure to the bottom via a plurality of tabs that removeably engage with the plurality of slots of the carrier bottom. The first plurality of interior walls are extensions of the handle. The second plurality of interior walls are made from two affixed half-walls. The bottom, the interior of the middle portion of each side, and the second plurality of interior walls define the central chamber. Each



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extension of the first plurality of interior walls with the flexible reinforcing flanges supports the handle. The handle is made from two layers of corrugated cardboard and spans across the central chamber. The two sides and the center half-walls are hingeably retractable to transition from the collapsed state to the expanded, carrier-ready state. Creasing lines made
5 by a plurality of linearly positioned perforations provides a hinging-like action that permits an easy and rapid bending of the carrier sides, walls, and horizontal surfaces.

The plurality of embodiments further includes a second preferred embodiment having exterior walls with tab projections substantially perpendicular to the handle that engage with slotted bottoms, or alternatively, slotted horizontal surfaces, to prevent reversion of the
10 expanded carrier to the collapsed state.

Alternate preferred embodiments of the invention include a food and beverage carrier and a microbiological carrier. The food and beverage carrier embodiment has at least one aperture of the plurality of apertures for carrying cups, cans, and other food and beverage items. The carrier sides and each side of the handle of the food and beverage carrier provides
15 printable surfaces to display advertising messages and images, either printed directly onto the surface or affixed with printable labels. Similarly, the microbiological carrier includes a plurality of vessel apertures, each aperture able to be varied in size, shape, and number to accommodate the transport of microbe-containing vessels or microbiological related supplies. The carrier sides and each side of the handle of the microbiological carrier provides printable
20 surfaces to display microbial information, biohazardous information, and disposal information of microbial containers and the microbiological carrier, including incineration. Yet other preferred embodiments include the handle having a gripping aperture.

The collapsed state of the multi-use carrier is expanded to a carrier-ready state for toting supplies and returned to the collapsed state through pivotable action along the
25 reinforcing flanges and along a plurality of crease lines. The minimum of assembly steps required to transfer the multi-use carrier from its collapsed state to an expanded state ready-



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for-transport is approximately three assembly actions. The first assembly action is a first pivoting action along the flanges and crease lines, followed by two succeeding pivoting actions to tuck-in each tab into each slot. Each carrier can be returned to its collapsed state by reversing the assembly actions, that is, pulling each tab to un-tuck each tab from its engaged slot to initiate a collapsing action, followed by reversing the first pivoting action along the crease lines and flanges. An alternate embodiment has finger holes in the second plurality of interior walls to accommodate the placing of a finger to assist with the initial collapsing action.

The collapsed multi-use carrier is then stacked in the collapsed state for efficient storage. The collapsed carriers can be reused in its re-expanded state, or in the event of soiling or spillage of chemical, radiological, and biohazardous materials on the corrugated cardboard carriers, can be easily disposed by incineration.

The single-die cut sheet includes regions for receiving glue, staples, rivets, Velcro, or equivalent fixing means to construct the handle and the flexible reinforcing flanges. The single-die cut sheet further includes cutouts for the vessel apertures, slots, the gripping aperture, and a plurality of perforated or partially scored crease lines to serve as folding axes to prepare the collapsed state and to transform the collapsed state into the expanded state.

Other preferred alternate embodiments include the multi-use carrier made from nonflexible panels comprised of materials configured to pivot about hinges-like structures. The nonflexible panels include rigid and thicker plastics, fiberglass, woods, hard pressed fiber papers, metals, or a hybrid of any of the preceding nonflexible materials. Instead of using perforations and partial scoring, hinges are connected between the sections of the multi-use carrier to make the necessary folding axes.



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BRIEF DESCRIPTION OF THE DRAWINGS

The preferred and alternative embodiments of the present invention are described in detail below with reference to the following drawings.

FIGURE 1 is a top view of a food and beverage carrier embodiment;

5 FIGURE 2 is a perspective view of a single die-cut sheet food and beverage embodiment partially folded to the collapsed state;

FIGURE 3 is the single die-cut sheet food and beverage embodiment further progressing to the folded-collapsed state;

FIGURE 4A is a top view of the collapsed food and beverage carrier embodiment;

10 FIGURE 4B is a side view of the collapsed food and beverage carrier embodiment;

FIGURE 5 is a perspective view of the expanded food and beverage carrier embodiment with single vessel apertures for each sub-chamber;

FIGURE 6 is a top inside view of the carrier bottom showing slot locations for engaging tabs from interior walls;

15 FIGURE 7 is a preferred alternate embodiment of the single die-cut sheet of the food and beverage carrier;

FIGURE 8 is another preferred alternate embodiment of the single die-cut sheet of the food and beverage carrier;

FIGURE 9A is a top view of the collapsed microbiological carrier embodiment;

20 FIGURE 9B is a side view of the collapsed microbiological carrier embodiment;

FIGURE 10 is a perspective view of the expanded microbiological carrier embodiment with multiple vessel apertures for each sub-chamber;

FIGURE 11 is a top view of a single die-cut sheet of the food and beverage carrier embodiment having external side flaps that lock to the carrier bottom;

25 FIGURE 12 is a perspective view of the expanded the food and beverage carrier embodiment having external side flaps that lock to the carrier bottom;



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FIGURE 13 is a top view of a single die-cut sheet of the food and beverage carrier embodiment having external side flaps that lock to the carrier horizontal surfaces; and

FIGURE 14 is a perspective view of the expanded food and beverage carrier embodiment having external side flaps that lock to the carrier horizontal surfaces.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGURE 1 presents a top view of a single die-cut sheet 10 of a preferred food and beverage embodiment and provides a basis to explain the assembly of the collapsed food and beverage embodiment. The single die-cut sheet food and beverage embodiment is a substantially rectangular cut, but may include other cuts that are substantially square, circular, and triangularly shaped. It is understood by those experienced in the art that the single die-cut sheet may be made from a multi-single die-cut sheeting machine configured to deliver more than one single die-cut sheet per manufacturing cycle.

The preferred single die-cut sheet 10 embodiment is made from paper-based, plastic-based, and hybrid paper and plastic-based materials. The paper-based products include non-corrugated cardboard and corrugated cardboard. The corrugated cardboard includes at least one of the fluting grades A, B, C, E, F, and micro-fluting. For example, the corrugated cardboard may include single grade (for example, A only, or C only), or any combination of single fluting grades. Combination grade examples would include B and E, or any combination that confers the necessary stability to meet the toting duties of the preferred embodiments of the multi-use carrier. The cardboard materials include craft, pre-print, white, and lithographic grade materials.

The plastic-based material includes plastic sheets and fiberglass reinforced plastics. The hybrid paper and plastic materials include cardboard, either corrugated on non-corrugated, embedded with plastic fibers, embedded with fiberglass, coated with plastic, and cardboard coated with fiberglass.



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The single die-cut sheet sheet 10 includes a plurality of sections, a plurality of foldable axes, a plurality of cutouts, and a plurality of affixing regions. The plurality of sections includes a first handle section 12A, a second handle section 12B, a first internal wall 14, a second internal wall 16, a bottom 18, a first horizontal surface 26, a second horizontal surface 28, a first side 22, a second side 24, a first internal half-wall 30, a second internal half-wall 31, a third internal half-wall 32, and a fourth internal half-wall 33. The first half-wall 30 has a first tab 34, and the third half-wall 32 has a second tab 37. The first handle section has a first extension 26A and a second extension 26B.

The plurality of foldable axes includes a first axis 50, a second axis 54, a third axis 206, a fourth axis 212, a fifth axis 216, a sixth axis 220, an seventh axis 224, a eighth axis 228, a ninth axis 232, and an tenth axis 236. The first axis 50 and the second axis 54 is substantially perpendicular to the third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth, axes 206, 212, 216, 220, 224, 228, 232, and 236. Each axis of the plurality of axes serves as a plurality of crease lines to impart folding ability to each section by providing hinge-like pivoting action about each axis. The pivoting action is conferred to each axis by procedures compatible to the type of material the single die-cut sheet sheet 10 is made. For example, linearly perforated lines or partially scored lines are applied to each axis, when the single die-cut sheet sheet 10 is made from paper-based materials, such as corrugated cardboard.

The plurality of cutouts includes a plurality of vessel apertures, a plurality of finger holes, a gripping aperture 48 located on the first handle section 12A and the second handle section 12B, a handle arch 12C located on the first handle section 12A and the second handle section 12B, and a plurality of slots. The plurality of vessel apertures includes a first vessel aperture 40, a second vessel aperture 42, a third vessel aperture 44, and a fourth vessel aperture 46. An alternate embodiment of preferred embodiment 10 has each vessel aperture surrounded by a vessel collar (not shown) the perimeter of each first, second, third, and fourth vessel apertures 40, 42, 44, and 46. The vessel collar is a plurality of flaps that



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provide a squeezing action to cups or cans having variable sizes such that inserted cups or cans into each vessel aperture are prevented from extensive slippage. The plurality of finger holes include a first finger hole 38 located on the first half-wall 30, and a second finger hole 39 located on the third half-wall 32. The plurality of slots includes a first slot 150 located on the bottom 18 and adjacent to the seventh axis 224, and a second slot 152 located on the bottom 18 and adjacent to the sixth axis 220. The first slot 150 is substantially diagonally separated from the second slot 152. The first slot 150 detachably receives the first tab 34 and the second slot 152 detachably receives the second tab 37 when the multi-use carrier is in its expanded state.

The plurality of affixing regions includes a first affixing region 25A located adjacent to the tenth axis 236 that is adjacent to the first internal wall 14; a second affixing region 25B located adjacent to the tenth axis 236 that is adjacent to the second internal wall 16; a third affixing region 27A located on the underside of the first extension 26A and is adjacent to the third axis 206 that is adjacent to the first handle section 12A; a fourth affixing region 27B located on the underside of the second extension 26B and is adjacent to the third axis 206 that is adjacent to the first handle section 12A, the third and fourth affixing regions 27A and 27B substantially linearly separated by the handle arch 12C; a fifth affixing region 29A located on the second handle section 12B adjacent to the fourth axis 212 that is next to the first horizontal surface 26; a sixth affixing region 29B located on the second handle section 12B adjacent to the fourth axis 212 that is next to the second horizontal surface 28; a seventh affixing region 182 located on second half-wall 31; and an eighth affixing region 184 located on the third half-wall 32.

The manufacture of the collapsed state of the multi-well carrier from the first single die-cut sheet 10 begins with application of affixing agents to the first, second, fifth, and sixth affixing regions 25A, 25B, 29A, and 29B. The affixing agents include glue, staples, rivets, Velcro, or equivalent functioning materials that affix surfaces together.



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FIGURES 2 and 3 shows the food and beverage embodiment in a sequence of manufacturing steps through partially folded configuration approaching the collapsed state of the multi-use carrier depicted in FIGURES 4A and 4B. The first wall 14 and the second wall 16 are folded over to the bottom 18 about the eighth axis 228, carrying with it the first horizontal surface 26, the second vessel aperture 42, the first half-wall 30, the second horizontal surface 28, the fourth vessel aperture 46, the fourth half-wall 33, and the first and second affixing region 25A and 25B are affixed to the bottom 18. The first handle section 12A is folded over onto the second handle section 12B by pivoting about the fourth axis 206 with alignment of the gripping apertures 48, and the first handle section 12A is affixed to the second handle section 12B by pressing each handle section together to permit the fifth and sixth affixing regions 29A and 29B to affix each handle section. Glue is applied to the third, fourth, seventh, and eighth affixing regions 27A, 27B, 182, and 184 to prepare for the next construction step to make the collapsed state of the multi-use carrier. The now-affixed handle sections 12A and 12B form a handle 12. The second side 24 is pivoted about the fifth axis 220 and brings the third affixing region 27A in contact with the first internal wall 14, the fourth affixing region 27B in contact with the second internal wall 16, the seventh affixing region 182 of the second half-wall 31 in contact with the first half-wall 30, and the eighth affixing region 184 of the third half-wall 32 in contact with the fourth half-wall 33.

FIGURE 3 is the food and beverage embodiment of the single die-cut sheet, almost completely folded to the collapsed state nearly equivalent to the collapsed state as depicted in FIGURES 4A and 4B. The third and fourth affixing regions 27A and 27B affix to the first wall 14 and the second wall 16, respectively. Similarly and substantially simultaneously, the second half-wall 31 is affixed to the first half-wall 30 by the sealing action of glue applied to the seventh affixing region 182. Similarly and substantially simultaneously, the third half-wall 32 is affixed to the fourth half-wall 33 by the sealing action of glue applied to the eighth affixing region 184.



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FIGURE 4A is a top view of the collapsed food and carrier embodiment 100. The handle 12 and the gripping aperture 48 are shown in geometric relationship to the first horizontal surface 26 and the second horizontal surface 28. Located centrally on the first horizontal surface 26 is the first vessel aperture 40. Substantially centrally located on the second horizontal surface 28 is the third vessel aperture 44. Continuous with the first surface 26 is the first half-wall 30 and the second half-wall 31 now affixed to the first half-wall 30. Visible within the first vessel aperture 40 is the first internal wall 14, the first affixing region 25A now functioning as a first reinforcing flange 25A, and the third affixing region 27A now functioning as a third reinforcing flange 27A. Visible within the third vessel aperture 44 is the second internal wall 16, the second affixing region 25B now functioning as a second reinforcing flange 25B, and the fourth affixing region 27B now functioning as a fourth reinforcing flange 27B. Visible about perimeter of the first vessel apertures 40 and the third vessel aperture 44 are the vessel collars 62, each vessel collar having the plurality of flaps cut substantially radially from the center of each aperture. The handle 12 is secured to the first internal wall 14 by the third reinforcing flange 27A and to the second internal wall 16 by the fourth reinforcing flange 27B. The first internal wall 14 is secured to the bottom 18 by the first reinforcing flange 25A. The second internal wall 16 is secured to the bottom 18 by the second reinforcing flange 25B. The handle 12 is pivotable about the fourth axis 212. The first horizontal surface 26 is pivotable about the fifth axis 216. The second horizontal surface is pivotable about the fifth axis 216. The fourth axis 212 is substantially parallel to the fifth axis 216.

The second half-wall 31 overlaps and is affixed to the first half-wall 30. Located on the interior edge of the first half-wall 30 is the first finger hole 38. Located on the interior edge of the first half-wall 30 is a first tab 34 that projects from the first half-wall 30. The first tab 34 is partially visible in the space defined by the gripping aperture 48. It is understood by those skilled in the art that the second half-wall 31 can overlap and be affixed to the first



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half-wall 30. Between the first horizontal surface 26 and the second half-wall 31 is the first axis 50. The first axis 50 continuously extends to and between the second half-wall 31 and the first horizontal surface 26. Substantially perpendicular to the first axis 50 is the fourth axis 212. Continuous with the second horizontal surface 28 is the third half-wall 32 and the fourth half-wall 33. The third half-wall 32 overlaps and is affixed to the fourth half-wall 33. Located on the interior edge of the third half-wall 32 is a second tab 37 that projects from the third half-wall 32. Located on the interior edge of the third half-wall 32 is the second finger hole 39. The second tab 37 is completely visible as the handle 12 does not fold over the plane defining the first and second vessel apertures 40 and 44. It is understood by those skilled in the art that the third half-wall 32 can overlap and be affixed to the fourth half-wall 33. Between the second horizontal surface 28 and the third half-wall 32 is the second axis 54. The second axis 54 continuously extends to and between the fourth half-wall 33 and the second horizontal surface 28. Substantially perpendicular to the second axis 54 is the fourth axis 212.

FIGURE 4B is a side view of the collapsed food and carrier embodiment and shows a side view of the collapsed state of the invention 100. The collapsed state of the invention 100 is depicted folded in three layers.

FIGURE 5 is a perspective view of the expanded food and beverage carrier embodiment 100 with single vessel apertures for each sub-chamber. The handle 12 is pivoted substantially to a vertical position about the fourth axis 212 and is secured to the first internal wall 14 by the third reinforcing flange 27A and the second internal wall 16 by the fourth reinforcing flange 27B. The first internal wall 14 and the second internal wall 16 are secured to the bottom 18 by the first and second reinforcing flanges 25A (shown) and 25B (not shown), respectively. The first internal wall 14 and the second internal wall 16 pivots about the tenth axis 236. The expanded food and beverage carrier embodiment 100 is prevented to return to its collapsed state by insertion of the first tab 34 into the first slot 150



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and the second tab 37 into the second slot 152 (all not shown). The first internal wall 14 and the second internal wall 16 function as a first plurality of interior walls.

The first side 22 is between the seventh axis 224 and the eighth axis 228. The second side 24 is between the fifth axis 216 and the sixth axis 220. The first side 22 functions as a first external wall and the second side 24 functions as a second external wall. Substantially parallel to the bottom 18 is the first horizontal surface 26 and the second horizontal surface 28. The first horizontal surface 26 and the second horizontal surface 28 is stabilized by the third and fourth reinforcing flanged 27A and 27B. Substantially perpendicular to the first horizontal surface 26 is the second half-wall 31. The second half-wall 31 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the second half-wall 31 is the first half-wall 30 (not shown), the first half-wall 30 being affixed to the second half-wall 31. The first half-wall 30 is substantially perpendicular to and contacts the first side 22. Substantially perpendicular to the second horizontal surface 28 is the third half-wall 32. The third half-wall 32 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the third half-wall 32 is the fourth half-wall 33, the fourth half-wall 33 being affixed to the third half-wall 32. The fourth half-wall 33 is substantially perpendicular to and contacts the first side 22. The first, second, third, and fourth half-walls 30, 31, 32, and 33 serve as a second plurality of interior walls. The first side 22 and the second side 24 serve as a plurality of exterior walls.

The fourth half-wall 32 has the second finger hole 39. A central chamber 36 depicted by the double arrow is defined by the bottom 18 and a central perimeter formed by the second plurality of interior walls, the middle section of the first side 22, and the middle section of the second side 24. The handle 12 spans across the central chamber 36 and is secured to the first plurality of interior walls. The first horizontal surface 26 has the first vessel aperture 40 and the second vessel aperture 42 substantially parallel to the second horizontal surface 28. The second horizontal surface 28 has the third vessel aperture 44 and



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the fourth vessel aperture 46. Each vessel aperture is shown substantially in a circular shape. Visible about perimeter of each vessel aperture are the vessel collars 62, each vessel collar having the plurality of flaps cut substantially radially from the center of each aperture. It is understood by those experienced in the art that the shape of each vessel aperture can vary to
5 accommodate commonly used vessels and utensils. Moreover, each vessel aperture may not have vessel collars. Furthermore, each vessel aperture is not limited to a single shape but includes a plurality of shapes, including shapes that are substantially circular, ovals, square, diamond, and X-pattern shape. It is also understood by those experienced in the art that any combination of shapes can be distributed for each aperture. For example, the first vessel
10 aperture 40 as depicted is circular, the second vessel aperture 42 is X-shaped, the third vessel aperture 44 is oval shaped, and the fourth vessel aperture 46 is square shaped. The handle 12 has a substantially elliptical gripping aperture 48 that is substantially centrally located in the handle 12 to permit single hand carrying of the expanded carrier 10. The surfaces of the first side 22, the second side 24, and on each side of the handle 12 provide surfaces to receive
15 printed informational messages and images. Furthermore, the bottom 18 section within the central chamber 36, and the underside of the bottom 18 provides surfaces to receive printed informational messages and images.

FIGURE 6 is a top inside view of the carrier bottom showing slot locations for engaging tabs from interior walls. The slot locations may vary in position and number to
20 coincide with tab locations and tab numbers to permit the respective insertion of the tabs with each respective slot.

FIGURE 7 is a preferred alternate embodiment of the single die-cut sheet of the food and beverage carrier. Substantially similar to the food and beverage embodiment depicted in FIGURE 1, the preferred alternate embodiment depicted in FIGURE 7 has substantially
25 similar components but differs in the shape of the handle and that the handle lacks the gripping aperture 48 of FIGURE 1, in providing a handle cushion 308, and in providing a



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substantially trapezoidal cutout 328 in the central portions of the first and second sides 22 and 24. In particular, the handle is shown is split into two sections, a first section 304A and a second section 304B, each section lacking a gripping aperture. The two sections have a deeper square curvature 304C than the shorter square curvature 12C depicted in FIGURE 1.

5 Additionally, a handle cushion 308 is shown extending from the second section 304B. The first affixing region is 25A located on the end-extension of the first wall 14 and the second affixing region is 25B located on the end-extension of the second wall 16. The vessel collar 62 is shown along the perimeter of each first, second, third, and fourth vessel apertures 40, 42, 44, and 46. Each vessel collar 62, via the plurality of flaps provides a squeezing action
10 to cups or cans having variable sizes such that inserted cups or cans into each vessel aperture are prevented from extensive slippage. The substantially trapezoidal cutout 328 in the first and second sides 22 and 24 confers to the central chamber 36 of the expanded carrier to have lower profile sidewalls from the middle regions of the first and second sides 22 and 24. Each lowered profile sidewalls permits larger sized or irregular shaped objects to be placed in and
15 overhang from the central chamber 36 of the expanded carrier.

The first affixing region is 25A located on the end-extension of the first wall 14 and the second affixing region is 25B located on the end-extension of the second wall 16. Similarly, the third, fourth, fifth, sixth, seventh, and eighth affixing regions 27A, 27B, 29A, 29B, 182, and 184 are located in comparable regions as illustrated in FIGURE 1. For
20 example, the third and fourth affixing regions 27A and 27B of FIGURE 7 are located on the underside surfaces of the first and second extensions 26A and 26 B.

FIGURE 8 depicts another preferred alternate embodiment of the single die-cut sheet of the food and beverage carrier. Substantially similar to the food and beverage embodiment depicted in FIGURE 1, the preferred alternate embodiment depicted in FIGURE 8 has
25 substantially the same components of FIGURE 1 but differs in the shape of the handle, in providing a substantially rectangular cutout 428 in the central portions of the first and second



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sides 22 and 24, and in providing a space to receive a business card or similar card-like insert in the sides of the carrier. In particular, the handle is shown is split into two sections, a first section 404A and a second section 404B, each section lacking a gripping aperture. The two sections have a bowl-shaped curvature 404C instead of the shorter square curvature 12C depicted in FIGURE 1. Additionally, a handle cushion 408 is shown extending from the second section 404B. The space to receive a business card is conferred to the preferred alternate embodiment by a slot-pair 432. Each slot of the slot-pair is positioned to receive and hold standard business cards. It is understood by those experienced in the art that more than one slot-pair can be present in the alternate embodiment, and the distance between each slot of the slot-pair may be varied to accommodate different size inserts.

The first affixing region is 25A located on the end-extension of the first wall 14 and the second affixing region is 25B located on the end-extension of the second wall 16. Similarly, the third, fourth, fifth, sixth, seventh, and eighth affixing regions 27A, 27B, 29A, 29B, 182, and 184 are located in comparable regions as illustrated in FIGURE 1. For example, the third and fourth affixing regions 27A and 27B of FIGURE 8 are located on the underside surfaces of the first and second extensions 26A and 26 B.

The vessel collar 62 is shown along the perimeter of each first, second, third, and fourth vessel apertures 40, 42, 44, and 46. Each vessel collar 62, via the plurality of flaps provides a squeezing action to cups or cans having variable sizes such that inserted cups or cans into each vessel aperture are prevented from extensive slippage. The substantially rectangular cutout 428 in the first and second sides 22 and 24 confers to the central chamber 36 of the expanded carrier to have lower profile sidewalls from the middle regions of the first and second sides 22 and 24. Each lowered profile sidewalls permits larger sized or irregular shaped objects to be placed in and overhang from the central chamber 36 of the expanded carrier.



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Figure 9A is a top view of the collapsed state of the microbiological carrier 500. The microbiological embodiment 500 incorporates many of the same components as the food and beverage carrier 100. The handle 12 and the gripping aperture 48 are shown in geometric relationship to the first horizontal surface 26 and the second horizontal surface 28. Located centrally on the first horizontal surface 26 is the first plurality of microbial apertures 610. Substantially centrally located on the second horizontal surface 28 is the third plurality of microbial apertures 614. Continuous with the first surface 26 is the second half-wall 31 and the first half-wall 30. The second half-wall 31 overlaps and is affixed to the first half-wall 30. Located on the interior edge of the first half-wall 30 is a first finger hole 38. Located on the interior edge of the first half-wall 30 is a first tab 34 that projects from the first half-wall 30. The first tab 34 is partially visible in the space defined by the gripping aperture 48. It is understood by those skilled in the art that the second half-wall 31 can overlap and be affixed to the first half-wall 30. Between the first horizontal surface 26 and the second half-wall 31 is a first perforation axis 50. The first perforation axis 50 continuously extends to and between the first half-wall 30 and the first horizontal surface 26. Substantially perpendicular to the first perforation axis 50 is a second perforation axis 54. Continuous with the second horizontal surface 28 is the third half-wall 32 and the fourth half-wall 33. The third half-wall 32 overlaps and is affixed to the fourth half-wall 33. Located on the interior edge of the third half-wall 32 is the second tab 37 that projects from the third half-wall 32. Located on the interior edge of the third half-wall 32 is the second finger hole 39. The second tab 37 is completely visible as the handle 12 does not fold over the plane defining first and third microbial apertures 610 and 614. It is understood by those skilled in the art that the third half-wall 32 can overlap and be affixed to the fourth half-wall 33. Between the second horizontal surface 28 and the third half-wall 32 is the second axis 54. The third perforation axis 54 continuously extends to and between the fourth half-wall 33 and the second horizontal surface 28. Substantially perpendicular to the second axis 54 is the fourth axis 212. The



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handle 12 pivots about the fourth axis 212. The microbiological embodiment 500 substantially operates with the same components as used by the food and beverage carrier embodiment 100.

FIGURE 9B is a side view of the collapsed microbiological carrier embodiment and shows a side view of the collapsed state of the invention 500. The collapsed state of the invention 500 is depicted folded in three layers.

Figure 10 is a perspective view that shows another embodiment of the invention in the form of a microbiological carrier 500 in its expanded three-dimensional state. The microbiological embodiment 500 incorporates many of the same components as the food and beverage carrier 100. The handle 12 has the first internal wall 14 and the second internal wall 16 (not shown), fixed to the bottom 18 via the first reinforcing flange 25. Similarly, the second reinforcing flange 27 affixes the first horizontal surface 26 to the first internal wall 14 and the second horizontal surface 28 to the second internal wall 16 (not shown). Substantially parallel to the handle 12 is the first side 22 and the second side 24. Substantially parallel to the bottom 18 is the first horizontal surface 26 and the second horizontal surface 28. The first horizontal surface 26 and the second horizontal surface 28 is stabilized by the second reinforcing flange 27. Substantially perpendicular to the first horizontal surface 26 is the second half-wall 31. The second half-wall 31 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the second half-wall 31 is the first half-wall 30, the first half-wall 30 being affixed to the second half-wall 31. The first half-wall 30 is substantially perpendicular to and contacts the first side 22. Substantially perpendicular to the second horizontal surface 28 is the third half-wall 32. The third half-wall 32 is substantially perpendicular to and contacts the second side 24. In overlapping contact with the third half-wall 32 is the fourth half-wall 33, the fourth half-wall 33 being affixed to the third half-wall 32. The fourth half-wall 33 is substantially perpendicular to and contacts the first side 22. The third half-wall 32 has the second finger hole 39. A central chamber 36 is defined by the



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bottom 18 and the central perimeter formed by first half-wall 30, the second half-wall 31, the third half-wall 32, the fourth half-wall 33, the middle section of the first side 22, and the middle section of the second side 24. The handle 12 spans across the central chamber 36 and is attached by the first horizontal surface 26 and the second horizontal surface 28 at substantially perpendicular orientations. The first horizontal surface 26 has the first plurality of microbial apertures 610 and a second plurality of microbial apertures 612. The second horizontal surface 28 has the third plurality of microbial apertures 614 and a fourth plurality of microbial apertures 616. Each plurality of microbial apertures is shown with a set of nine apertures of substantially equal sizes. It is understood by those experienced in the art that the number of apertures may vary, and the sizes of the apertures may vary within each plurality of microbial apertures to accommodate different sized microbial containers. The handle 12 has the substantially elliptical gripping aperture 48 that is substantially centrally located in the handle to permit single hand carrying of the expanded microbiological carrier 500. The panels on the first side 22, the second side 24, and on each side of the handle 12 provide surfaces to receive printed messages concerning biohazardous materials. Furthermore, the bottom 18 section within the central chamber 36, and the underside of the bottom 18 provides surfaces to receive printed messages concerning biohazardous materials. The biohazardous messages include microbiological information including handling procedures, warnings, and directions for disposal of the microbiological carrier 500, including incineration.

FIGURE 11 is a top view of a preferred single die-cut sheet of the food and beverage carrier embodiment 700 having external walls or side flaps that engage to the carrier bottom's 18 first slot 150 and the second slot 152 that is substantially diagonally opposite the first slot 150. The preferred embodiment 700 has a first horizontal surface 310 and a second horizontal surface 314. The first horizontal surface 310 houses the first and third vessel apertures 40 and 44. The second horizontal surface 314 houses the second and fourth vessel apertures 42 and 46. Each vessel aperture as illustrated in FIGURE 11 does not have the



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aperture collars 62 as illustrated in FIGURES 4A, 5, 7, and 8. Alternate embodiments of the preferred embodiment 700 have the aperture collars 62 as illustrated in FIGURES 4A, 5, 7, and 8. Substantially similar to the preferred single die-cut sheet embodiment 10 of FIGURE 1, the preferred embodiment 700 has many of the same components (the first through the tenth axes 50, 54, 206, 212, 216, 220, 224, 228, 232, 236; the first side or first external wall 22; the second side or second external wall 24; the gripping aperture 48, for example).

Extending from the first horizontal surface 310 is a first external half-wall 310A and a second external half-wall 310B. Projecting from the second half-wall 310B is a first tab 310C. Extending from the second horizontal surface 314 is a third external half-wall 314A and a fourth external half-wall 314B. Projecting from the third external half-wall 314A is a second tab 314C. Extending from the second horizontal surface 314 across from the ninth axis 232 is an internal wall 316.

The preferred embodiment 700 has seven affixing regions instead of eight affixing regions described in FIGURES 1, 7, and 8. The seven affixing regions that includes a first affixing region 325 extending from the internal wall 316 across from the tenth axis 236, a second affixing region 327A, a third affixing region 327B, a fourth affixing region 329A, a fifth affixing region 329B, a sixth affixing region 329C, and a seventh affixing region 329D. The second and third affixing regions 327A and 327B are on the underside and approximately close to the end of the first handle section 12A. The fourth and fifth affixing regions 329A and 329 B are located on the second handle section 12B. The sixth affixing region 329C is located on the first external half-wall 310A. The seventh affixing region 329D is located on the second external half-wall 310B. Other alternate embodiments of the preferred embodiment 700 include six affixing regions such that the second and third affixing regions 327A and 327B are effectively merged together to form a single affixing region substantially similar to the first affixing region 325.



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The collapsed state of alternate embodiment 700 is made in a manner substantially equivalent to expanded embodiment 800 illustrated in FIGURE 12. Affixing the second external half-wall 310B to the fourth external half-wall 314B makes a third external wall 424. The third external wall 424 includes the first tab 310C extending from it. Affixing the
5 first external half-wall 310A to the third external half-wall 314A makes a fourth external wall 428. The fourth external wall 428 includes the second tab 314C extending from it.

FIGURE 12 is a perspective view of a preferred expanded the food and beverage carrier embodiment 800 having external walls or side flaps that lock to the carrier bottom. The expanded state is prevented from reverting back to the collapsed state by insertion of the
10 first tab 310C extending from the third wall 424 into the second slot 152 and by insertion of the second tab 314C extending from fourth wall 428 into the first slot 150. The second horizontal surface 314 includes the first vessel aperture 40 and the third vessel aperture 44. Through the third vessel aperture 44 the internal wall 316 is visible and is secured to the bottom 18 via the first reinforcing flange 325. Similarly, the handle 12 is secured to the
15 internal wall 316 via the second reinforcing flange 327. The gripping aperture 48 is centrally located on the handle 12. Through the fourth aperture 46 located on the second horizontal surface 310 the first side 22 is visible. The third and fourth external walls 424 and 428 are substantially perpendicular to the first and second sides 22 and 24.

FIGURE 13 is a top view of a preferred single die-cut sheet of the food and beverage
20 carrier embodiment 900 having external walls or side flaps that lock to the carrier horizontal surfaces. Substantially similar to the preferred single die-cut sheet embodiment 10 of FIGURE 1 and the preferred single die-cut sheet embodiment 700 of FIGURE 11, the preferred embodiment 900 has many of the same components (the first-tenth axes, gripping aperture 48, the internal wall 316, the first horizontal surface 310, the second horizontal
25 surface 314, for example) and does not illustrate the aperture collars 62 of FIGURES 4A, 5,



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7, and 8. Alternate embodiments of the preferred embodiment 700 have the aperture collars 62 as illustrated in FIGURES 4A, 5, 7, and 8.

The preferred embodiment 900 has five affixing regions substantially similar to the preferred embodiment 700 of FIGURE 11. The second and third affixing regions 327A and 327B are on the underside of first handle section 12A. Similarly, the fourth and fifth affixing regions 329A and 329B are on the second handle section 12B. The preferred embodiment 900 has a first slot 155 on the first horizontal surface 314, and a second slot 157 on the first horizontal surface 310. The first horizontal surface 310 includes the first vessel aperture 40 and the third vessel aperture 44. The second horizontal surface 314 includes the second vessel aperture 42 and the fourth vessel aperture 46. Extending from the second horizontal surface 314 is the interior wall 316. Adjacent to interior wall 316 is across from the tenth axis 236 is a first affixing region 325. The first affixing region 325 is continuous and when juxtaposed to the bottom 18, forms a first reinforcing flange 325 in the expanded carrier illustrated in FIGURE 14. The second and third affixing regions 327A and 327B are substantially separated near the end of the first handle section 12A. The second and third affixing regions 327A and 327B when juxtapositioned to the internal wall 316, forms a second reinforcing flange 327 in the expanded carrier illustrated in FIGURE 14.

FIGURE 13 illustrates four vessel apertures, with two vessel apertures for each horizontal surface. Alternate embodiments of preferred embodiment 900 may have one vessel aperture for each horizontal surface, or greater than two vessel apertures for each horizontal surface. Yet other alternate embodiments include four affixing regions such that the second and third affixing regions 327A and 327B are effectively merged together substantially similar to the first affixing region 325.

Unlike the preferred embodiments depicted in FIGURES 1, 6, 8, 11, and 12, the bottom 18 does not have slots. Extending from the bottom 18 is a first bottom extension 18A and a second bottom extension 18B. A first tab 18C projects from the first bottom extension



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18A and a second tab 18D projects from the second bottom extension 18B. The first tab 18C is detachably received into the first slot 155 and the second tab 18D is detachable received into the second slot 157 for the expanded carrier illustrated in FIGURE 14.

FIGURE 14 is a perspective view of the expanded food and beverage carrier preferred embodiment 1000 having external walls or side flaps that lock to the carrier horizontal surfaces. The expanded embodiment 1000 is derived from a collapsed carrier state made from the preferred single die-cut embodiment 900 in a manner substantially similar to the collapsed carrier embodiment 100 of FIGURE 4A. The expanded carrier embodiment 1000 is secured by pivoting the first bottom extension 18A so that insertion of the first tab 18C into the first slot 155 occurs, and the pivoting the second bottom extension 18B so that insertion of the second tab 18D into the second slot 157 occurs. The first extension 18A and the second extension 18B function as a third and a fourth external walls that are substantially perpendicular to the first and second sides 22 and 24. The second horizontal surface 310 includes the first vessel aperture 40 and the third vessel aperture 44. Through the third vessel aperture 44 the internal wall 316 is visible and is secured to the bottom 18 via the first reinforcing flange 325. Similarly, the handle 12 is secured to the internal wall 316 via the second reinforcing flange 327 as seen through the first vessel aperture 40. Through the fourth aperture 46 located on the second horizontal surface 314 the first side 22 is visible.

While the preferred embodiment of the invention has been illustrated and described, as noted above, many changes can be made without departing from the spirit and scope of the invention. For example, the preferred embodiments using the external side flaps using the tabs to hook to the bottom slots or to the slots of the horizontal surfaces may be combined in hybrid form so that one side flap hooks to the bottom, and the other side flap hooks to the horizontal surface. Similarly, the preferred embodiments using the second plurality of internal wall using tabs to insert into the bottom slots may be designed to insert into slots cut into the horizontal surfaces, or alternatively, one tab inserts into a bottom slot and another tab



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inserts into a slot cut into a horizontal surface. Additionally, the die-cut sheets include widths of approximately 10 to approximately 16 inches, and lengths of approximately 25 inches to 40 inches. The heights of the expanded carriers can vary between approximately 1 inch to approximately 4 inches. Other dimensions for the width, length, and height of each collapsed and expanded multi-use carrier embodiment may vary to meet the required toting duties. For example, single die-cut sheet sheets of approximately $31\frac{1}{4}$ by $11\frac{3}{16}$ inches will render an expanded carrier having dimensions of approximately $11\frac{1}{8}$ inches long, $7\frac{1}{2}$ inches wide, approximately $2\frac{1}{8}$ inches high as determined by the height of the external walls, and includes the central chamber having a length of approximately $7\frac{1}{8}$ inches, a width of approximately $3\frac{1}{8}$ inches, and a height of approximately 2 inches as determined by the height of the internal walls. Similarly, single die-cut sheet of approximately $38\frac{1}{2}$ by $15\frac{1}{2}$ inches will render an expanded carrier having dimensions of approximately $15\frac{1}{2}$ inches long, 9 inches wide, approximately $2\frac{1}{8}$ inches high as determined by the height of the external walls, and includes the central chamber having a length of approximately $8\frac{3}{8}$ inches, a width of approximately $6\frac{1}{2}$ inches, and a height of approximately 2 inches as determined by the height of the internal walls.

Accordingly, the scope of the invention is not limited by the disclosure of the preferred embodiments. Instead, the invention should be determined entirely by reference to the claims that follow.

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BLACK LOWE & GRAHAM ^{PLLC}


816 Second Avenue
Seattle, Washington 98104
206.381.3300 • F: 206.381.3301

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MULTI-USE CARRIER

ABSTRACT OF THE DISCLOSURE

A single unit cardboard carrier is transformed from a collapsed state into an expanded multi-use carrier with a minimum of assembly actions. A preferred embodiment of the multi-use carrier has a central chamber, a plurality of sub-chambers located adjacent on each side of the central chamber, and is stabilized by a handle anchored to the carrier bottom. Each sub-chamber has at least one aperture to hold at least one container. The cardboard carrier provides printable surfaces to receive advertising messages for the food and beverage carrier and information-specific messages pertaining to the chemical, radiological, and microbiological fields.



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